

## **ABSTRACT**

A method of writing data on magnetic stripe of a smart card by imposing a magnetic field of a given polarity on each selected segment of the magnetic stripe, such that data on the magnetic stripe can be read by a magnetic card reader and interpreted as digital bits. The method includes providing a multi-dimensional conductor array placed proximate to the magnetic stripe, the number of conductors in the array is considerably smaller than the number of segments, and each segment is associated with two or more conductors. The method further includes providing current drivers for sending currents in a controlled direction through the conductor array. The system further includes sending currents, using said current drivers, through conductors of the array, such that for each one of the selected segment composite currents flowing through its associated two conductors overcome the coersivity of the segment on the magnetic stripe.